

CLAIMS

1. Arcing contact element (10,18) for electrical switching off equipment for medium and high tension, particularly for circuit breakers, this element being intended to be added to a fixed (8) or mobile (16) support belonging to a contact assembly of this switching off equipment, the said element (10, 18) being capable of occupying during operation an initial position in which it is in contact with another contact element (18,10) as well as a second position in which it is separated from this other contact element so as to allow interruption of the current in the equipment, the said contact element (10,18) including carbon fibres (26) embedded in a matrix (30,34) which includes at least one electrically conducting material characterised by the fact that the said matrix including at least one conducting material also includes carbon in the form of graphite.

2. Element according to claim 1 characterised by the fact that the carbon fibres (26) include long fibres arranged according to three-dimensional braiding (28).

3. Element according to any of the preceding claims, characterised by the fact that the conducting material represents a weight of between 10 and 50% of this contact element.

4. Element according to claim 3, characterised by the fact that the conducting material represents a weight of between 20 and 40% of this contact element.

5. Element according to any of the preceding claims, characterised by the fact that the size of the particles of the conducting material is between 0.1 and 200 micrometers.

5        6. Element according to claim 5, characterised by the fact that the size of the particles of the conducting material is between 1 and 50 micrometers.

7. Element according to any of the preceding claims, characterised by the fact that the electrically  
10        conducting material is copper.

8. Element according to any of the preceding claims, characterised by the fact that the diameter of the carbon fibres (26) is between 0.1 and 50 micrometers.

15        9. Element according to claim 8, characterised by the fact that the diameter of the carbon fibres (26) is between 2 and 15 micrometers.

10. Element according to any of the preceding claims, characterised by the fact that it is roughly  
20        composed of carbon fibres (26) and the matrix (30, 34), consisting of at least one conducting material.

11. Manufacturing procedure of an arcing contact element (10, 18) in accordance with any of the preceding claims, characterised by the fact that it  
25        includes the following stages:

- An arrangement (28) of the carbon fibres (16) is formed and

- These carbon fibres (26) are impregnated using the matrix (30, 34) including at least one  
30        conducting material.

12. Procedure according to claim 11, characterised by the fact that the carbon fibres (26) are first partially impregnated with carbon so as to form a primary carbon matrix (30) with inset spaces (32), then  
5 by the fact that these inset spaces are filled with the conducting material so as to realise a secondary material (34) formed of this conducting material.

13. Contact unit for electrical switching off equipment for medium and high tension, particularly for  
10 circuit breakers, including a fixed (6) and mobile (14) contact device, each device (6, 14) being equipped with an arcing contact element (10, 18), these two contact elements (10, 18) being capable of presenting a first mutual contact position and a second mutual switching  
15 off position in which they are separated from each other, characterised by the fact that at least one arcing contact element (10, 18) is in accordance with any of claims 1 to 11.

14. Electric switching off equipment for medium or  
20 high tension, in particular circuit breakers, including a switching off chamber (2) equipped with a contact assembly (10, 18, 22), characterised by the fact that this contact assembly is in accordance with the preceding claim.